Environmental Conflicts: The case of the Nile River Basin (NRB)

By

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Abstract

There is a growing significant threat posed by environmental conflicts. Disputes and tensions over shared renewable resources such as water have become prominent in the realm of International Relations. Shared water resources (i.e. basins, rivers and lakes) have become hotspots for conflict. The fact that basins and rivers move across rather than along borders have made conflict inevitable and solutions to water sharing complex. The Nile River Basin (NRB) plays a central role in the environment-conflict thesis. And this is due to its volatility and proximity as an international river shared by eleven riparian countries (i.e. Burundi, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Tanzania, Uganda, the Democratic Republic of the Congo (DRC), Sudan and South Sudan). The Nile faces considerable challenges of environmental scarcity such as population growth, degradation and depletion, and uneven distribution of the Nile waters thus making it highly susceptible to an inter-riparian conflict in the basin.

Keywords: Nile River Basin; environmental scarcity; environmental conflict; African Union; Nile Basin Initiative

1. Introduction

There is a growing significant threat posed by environmental conflicts. Valuable resources exist, but in relatively small amounts (Klare, 2002:142), and their degradation is commonly believed to be a significant cause of environmental conflicts (Libiszewski, 1992:14). According to Libiszewski (1992:14), environmental conflicts are traditional conflicts induced by environmental degradation, and are often

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manifest as conflicts over resources. These resources include water and agricultural land, and an ever-widening list of categories ranging from minerals to oil. IR is experiencing a new landscape of global conflict as far as resources are concerned, with water scarcity contributing to the intensity of competition over resources (Bujra, 2002:11). Disputes and tensions over shared renewable resources such as water have become prominent in the realm of IR.

At the heart of global environmental politics lies the issue of water wars, which has become part of the political rhetoric (Toset et al, 2000:972). According to Turton (2000:36), a water war is “... a war caused by the desire for access to water, in which the scarcity of water determines the means to go to war.” Tulloch (2009) asserts that, “... the term itself refers to conflict between countries, states, or groups over access to water resources, and such conflicts come as a result of opposing interests of water users, public or private.” As unlikely as it seems for water to be the source of conflict, however, it bears many similarities to oil. It is essential for a wide range of human activities and it exists in relatively small amounts (Klare, 2002:142).

The Nile River Basin (NRB) plays a central role in the conflict over water. This study focuses on the NRB due to its volatility and proximity. The Nile is an international river shared by eleven riparian countries. These are Burundi, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Tanzania, Uganda, the Democratic Republic of the Congo (DRC), Sudan and the newly founded South Sudan. This makes it the world’s longest river at about 6,700km or 4,100 miles (Kameri-Mbote, 2007:1) (see Map 1).

Shared water resources (i.e. basins, rivers and lakes) have become hotspots for conflict. The fact that basins and rivers move across rather than along borders have made conflict inevitable and solutions to water sharing complex. The Nile flows across and around all eleven riparian countries, making them highly dependent on its water (Alcamo et al, 1996:336). These riparian countries can be divided into upstream (i.e. Burundi, Eritrea, Ethiopia, Kenya, Rwanda, Tanzania, Uganda and the DRC) and downstream countries (i.e. Egypt and Sudan) (Marterns, 2011:1). According to Kieyah (2007:2), “The Nile Basin faces considerable challenges. These challenges include water scarcity, equitable water distribution, poverty, environmental degradation and insecurity.”
2. Environmental Scarcity Theory

The outbreak of violent conflict is complex. Environmental scarcity emerges within a political, social, economic, and ecological context and interacts with many of these contextual factors to contribute to violence (Percival and Homer-Dixon, 1998:279). Since the early 1990s, both academic and policy debates have argued for the idea that increasing environmental scarcity is one of the root causes of violent conflicts. And it is believed to be rapidly increasing. By definition, environmental scarcity refers to “the declining availability of renewable natural resources such as freshwater or soil” (Bingham, 2001). This means that the supply of renewable resources such as water is not sufficient to meet the local demand (UNEP, 2012:29). Environmental scarcity is caused by the degradation and depletion of renewable resources, the increased demand for these resources, and/or their unequal distribution (Homer-Dixon, 1999:177).
Scarcity-induced interstate conflicts over water have become probable (Homer-Dixon, 1999:5). Supporting this is Homer-Dixon's environmental scarcity theory which argues that the scarcity of renewable resources such as cropland, fish, forests, and most importantly water could lead to violent conflicts (Homer-Dixon, 1999:8). The environmental scarcity theory illustrates how scarcity of renewable resources can contribute to social breakdown and violence (Homer-Dixon, 1999:4). It does this by providing environment-conflict linkages. Homer-Dixon (1999:4) claims that the idea laid by early scholars in explaining the link between the environment and conflict was speculative and imprecise, hence the need for a theory that addresses this linkage. The hypothesis behind the environmental scarcity approach is that "resource scarcity, through the three causal forms of scarcity (i.e. demand-induced, supply-induced, and structural-induced scarcity), have the potential to cause conflict".

The concept "environmental scarcity" encompasses all these three sources. What is unfortunate about most analysts is that they often study resource depletion and population growth in isolation from resource distribution. However, the environmental scarcity theory allows these three distinct sources of scarcity to be incorporated into one analysis. Hence the theory argues that an analysis of the Nile disputes should not be made only on the basis of the uneven distribution, but concurrently with water demand and supply (Homer-Dixon, 1994:8-11). Empirical evidence suggests that the first two sources are most dangerous when they interact with unequal resource distribution (Homer-Dixon, 1994:8; Urdal, 2008:593). The environmental scarcity theory stipulates that these types of scarcity (i.e. demand, supply and structural-induced scarcity) are not mutually exclusive; they often occur simultaneously and interact with one another (Homer-Dixon, 1994:8-11). "Uneven distribution never acts on its own, its impact is always a function of its interaction with resource demand and supply" (Schwartz et al, 2000:80).

2.1. Demand-induced scarcity

Roudi-Fahimiet al (2002:4) asserts that the most important trend that affects the demand for water is population growth, which directly increases the pressure over available resources and production capabilities in a country. Therefore leading to the scarcity of renewable natural resources such as productive land, freshwater, and
forest (Weiner and Russell, 2001:3). The demand-induced scarcity argument posits that population growth or an increase in consumption levels decreases the amount of limited natural resources available to each individual (Bingham, 2001).

If a resource base is constant, the availability of resources per person will diminish with the increasing number of people that have to share it. Such scarcity can also arise from an increase in demand per capita (Urdal, 2008:592-3). Homer-Dixon (1999:48) indicates that an increase in demand assumes that the growth in population divides the pie into smaller slices for each individual, group or state. Demand-induced scarcities arise only with resources that are rivalrous (e.g. fisheries, cropland, forests, and water). In recent years the global pressure on limited fresh water resources has been mounting, driven by an increasing population growth. In October 2011, the global human population surpassed 7 billion and is projected to rise to 8 billion by the year 2025. This increase, coupled with rising rates of consumption intensifies competition for water (UNEP, 2012:17-18).

Population growth becomes a drive for scarcity in that it boosts the demand for a specific resource (Homer-Dixon, 1999:15). According to Kennedy (2001), population growth engenders resource scarcity by creating a demand-induced scarcity, which forces states to adopt greedy measures in an equation where a resource is shared among more than one state. A comprehensive argument is that population growth will outstrip the natural resources of the immediate environment, leading to deprivation which will ultimately lead to conflict and instability either directly through competition for scarce resources, or indirectly through the generation of environmental refugees (Barnett, 2000:278).

Environmental threats have often been attributed to such rapid human population growth (UNEP, 2006:1). The continuation of the downward spiral of increasing population and declining environmental quality is inevitable (Urdal, 2005:418). According to Benjaminsen (2008:819-21), African dry lands are allegedly among the areas most seriously affected by degradation. Water has been regarded as a finite and fixed resource. Tøset et al. (2000:274) argue that only 3% of the world’s water is usable for drinking and agriculture.

A resource is deemed to be rivalrous when its use by one economic actor reduces its availability for others (Homer-Dixon, 1999:48; Percival and Homer-Dixon, 1998:280).
water supply is available for human consumption and is identified as freshwater. Klare (2001:57) argues that, the dangers that come with international competition for adequate water resources will increase inevitably.

In basins, rivers, lakes and water aquifers shared by more than two countries, competition for limited supplies can lead countries to see access to water as a matter of national interest. Water will therefore increasingly become a salient element of interstate politics, in many cases even leading to violent conflict (Gleick, 1993:79-80).

2.2. Supply-induced scarcity

Supply-induced scarcity results from degradation or depletion of natural resources (Urdal, 2008:593). According to the supply-induced scarcity, a drop in the supply of a key resource assumes that the resource pie shrinks because there has been a reduction in quantity and quality (Homer-Dixon, 1999:48). This scarcity refers to an environmental degradation that decreases the overall available amount of a limited natural resource, therefore decreasing the amount available to each individual (Bingham, 2001). By environmental degradation, the article relates much of its arguments to “the negative human disturbance”. This refers to the human-made environmental changes that consequently have a negative impact on human society (Libiszewski, 1992:4).

“Supply-induced scarcity results from rivers running dry, lowered water-tables and polluted groundwater and surface water courses” (van der Molen and Hildering, 2005:135). It simply becomes less of a resource as a result of non-sustainable use that does not allow the resource to regenerate. For instance, land degradation through agriculture, industry and domestic use that ultimately lead to erosion of the landscape (Bächler, 1998:69).

2.3. Structural-induced scarcity

Structural scarcity refers to the unequal access or distribution of natural resources (Bingham, 2001). This is a form of scarcity that applies only to certain groups that, relative to other groups, are excluded from equal access to particular resources.
Such unequal social distribution of a resource does not presuppose actual scarcity if the resource was distributed evenly (Urdal, 2008:593). Van der Molen and Hildering (2005:135) argue that structural scarcities emerge when more powerful segments of water users confiscate a larger part of the scarce resource. This assumes that some individuals, groups or states get disproportionately large slices of the pie while other groups get slices that are too small (Homer-Dixon, 1999:48). And this according to Homer-Dixon may cause violent conflicts (Homer-Dixon, 1999:48; Homer-Dixon and Blitt, 1998:6).

Homer-Dixon (1999:48) assert that structural scarcities arise from resources that are “excludable”, which means that property rights or other institutions can be used to prevent access to the resource by some actors. Renewable resources such as river water have characteristics that permit the assignment of clear property rights. Conflicts over natural resources arise when parties disagree about the ownership, allocation and use of natural resources. An analysis of these agreements is necessary to provide a means for the author to indicate the structural-induced scarcity as argued by Homer-Dixon’s environmental scarcity theory. It is also made in an attempt to provide a theoretical linkage of the structural-induced scarcity and the potential for conflict in the Nile basin. This linkage is argued on the basis that property rights or other institutions are put into place to prevent access to water by other actors. And, the scarcity and grievances that may result from this can reinforce existing stress factors and play a role in inciting tensions and disputes (Homer-Dixon, 1999:48; UNEP, 2012:14). The environmental scarcity theory denotes that the increasing scarcity of renewable resources, or grievances over their governance and/or transboundary nature, can reinforce existing stress factors and play a contributing role in the decision to resort to violence (UNEP, 2012:14).

3. Theoretical Application: Environmental Scarcity Theory in the Nile River Basin

3.1. Demand-induced scarcity: population growth in the NRB

According to Baecher et al. (2000:11), the Nile is confronted with immense population growth. The use of the Nile waters for a growing population can become a source of conflict. The Nile Basin Initiative (NBI) (2012a) pointed out that population growth in
the Nile Basin is increasing at an unprecedented rate in which in 2010, the total population in the basin countries was 424 million, of which 232 million people live in the basin. The initiative also estimated that by 2025, the population growth will be 600 million people living in the basin countries and more than 300 million people living in the basin.

The United Nations Population Division (UNPD) also estimates that the total population in the Nile basin will reach 647 million by 2030 which represents a 7.8 per cent increase from the population in 2025 and an increase of 52 per cent for the population in 2010. It also estimates that just over half of these people will be living within the basin boundaries (Nile Basin Initiative, 2012b:228). This rapid population growth increases pressure on the natural resource base. The population growth concentrated in the river basin and the migration to the NRB has further exacerbated this population activity (UNEP, 2006:1).

The continued population increase will certainly add to the future water demands in the basin (Baecher et al, 2000:11). And will place immense pressure on the Nile and its resources leading to severe degradation and thus negatively affecting and/or reducing outputs (Okascha, 2012:15). This increase in the demand for water resources generates a number of problems facing many international rivers (Marty, 2001:14). As the population in the basin is expected to double in the coming years, pressing challenges are evident as societies living close to the river are confronted by social, environmental and economic challenges (UNEP, 2006:1-5).

The situation is worsening due to the fact that per capita water availability in the Nile basin countries is expected to fall dramatically (Okbazaghi, 2008:5). With the predicted fall in per capita water availability, disputes over water supplies would become a serious cause of conflict among these riparian countries. For instance, it is predicted that by 2025, Egypt, Ethiopia, Kenya, Rwanda and Burundi will experience water scarcity, while Uganda, Tanzania and Eritrea will be under water stress (Karyabwite, 2000:6-7).

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3 Water scarcity is a condition in which the annual availability of internal renewable fresh water is 1,000 cubic meters or less per person (CBM/ p.p) (Xercavins, 1999:158).
A fall in per capita water availability coupled with a rapid population growth, leaves most of the riparian countries faced with internal and interstate conflicts, immense droughts and famine. Ethiopia, despite it being the source of the Blue Nile, has been faced with worsening drought conditions and famine between 1965 and 2006, making it highly dependent on international food aid (Okbazaghi, 2008:5). Adding to the fall in per capita water availability is the agricultural activities to feed the growing population which increases nonpoint pollution, siltation and erosion (Baecher et al, 2000:11).

3.2. Supply-induced scarcity: water depletion and degradation in the NRB

The high dependence of all eleven riparian countries on the Nile River Basin has caused it to deplete. The rapid population growth depletes the region’s already scarce water supplies as demands from agriculture, industry and domestic use rise (Di Nunzio, 2013:2). Factors such as land degradation, agriculture, industry and domestic use are paramount to depletion and degradation of the Nile. For instance, population size affects agricultural productivity. Agricultural activity is affected by resource degradation, which is affected by the land-use decisions people make based on population size (Baecher et al, 2000:11). Inappropriate land-use practices and farming techniques such as overgrazing by domestic livestock, agricultural practices in irrigated and large scale farms in rain-fed areas and poor cultivation practices have the greatest impact on land degradation. These practices are the most common land-use practices in the Nile basin.

Environmental degradation and depletion poses an alarming threat for conflict in the region. For instance, high levels of water degradation assume that Cairo, who has maintained dominance over the utilisation of the Nile for decades, will be consuming approximately 20 per cent more water than it is already doing. This supposes that

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Water stress is a condition in which the annual availability of internal renewable fresh water is less than 1,667 and greater than 1,000 CBM per person in the population. Water scarcity is the point in which the aggregate impact of all users impinges on the supply or quality of water under prevailing institutional arrangements to the extent that the demand by all sectors, including the environment, cannot be fully satisfied. Water scarcity is a relative concept and can occur at any level of supply or demand (UNDESA, 2013; UNEP (2012:18)).
other riparian countries will be left with little if any water to consume for developmental purposes. Therefore, this less consumption of water by other riparian countries mean more potential for disputes and conflict (Dakkak, 2013).

3.2.1. Land degradation

Land degradation is inextricably linked to the quality, volumes and timing of water flow in the basin (Baecher et al, 2000:73). Land degradation has become a huge challenge within and between the Nile countries (Di Nunzio, 2013:6). For instance, the Rwandan genocide led to massive displacements which left 60% of its forest damaged thus leaving 70% of its land severely degraded (Bigagaza et al, 2002:51-52). Burundi on the other hand has lost 30% of its land to degradation (Kigomo, 2003). In 2002, 30% of Kenya’s land faced severe degradation in which by 2008 one third of its population was dependent on this degraded land. This is a similar case in Sudan where 76% of its population resides in degraded areas. The highlands of Ethiopia, Uganda and Tanzania are also subject to degradation. Lastly, Egypt’s north-western delta faces the highest degradation due to contamination and increased salinity. This can in many cases be because Egypt lies downstream and it receives water flow after it has faced pollution downstream (Desta, 2012:10-13). Practices such as poor cultivation especially evidenced in parts of the Ethiopian highlands and the Egyptian delta is severe and has contributed largely to soil erosion.

3.2.2. Agriculture

Agricultural practices on the other hand have the potential for contributing to nonpoint pollution from the use of chemical fertilizers and pesticides (Somboek and Sene, 1993; Baecher et al, 2000:73). Agriculture is the largest consumer of water in Egypt using about 85 per cent of available water. Drainage water from agricultural fields contains pollutants such as pesticides residues, toxic organic and inorganic pollutants, salts and treated and untreated domestic wastewater (Water Policy Program, 2002:6). There are over 90 agricultural drains that discharge into the Nile that also include industrial wastewater. This drainage has led to a high salinization
(i.e. a build-up of salts into the soil) and saline intrusion (i.e. when the ground is saturated with saltwater) in the delta. This build-up of salts into the soil means the soil cannot retain water which prevents anything from growing. Such effects on the soil, which then causes decline in precipitation tends to favour soil erosion (Libiszewski, 1992:3).

Half of Egypt is desert and only 6 per cent of the country is arable and agricultural land. Egypt receives less than 80 mm of rainfall a year therefore forcing the country to depend on inefficient methods of irrigation such as excessive watering and the use of wasteful irrigation (e.g. where gallons of water is pumped over the crops). Agricultural runoffs, industrial effluents and municipal sewage are being recklessly dumped into the Nile River, leaving its water unfit for human consumption. Agricultural runoffs contain pollutants from pesticides and herbicides, which have negative effects on the river and the people using it. Industrial effluents containing heavy metals are highly toxic (Dakkak, 2013).

3.2.3. Industry

Mining, although not widespread in the basin, has posed as another source of both erosion and runoff pollution. It has been noted that mines in Kilembe, Uganda, release large quantities of copper and cobalt into streams and river on surrounding lakes (Kwetegyeka et al, 2014:482). There are also 36 industries that discharge their pollution sources directly into the Nile, and into the irrigation canals. These types of industries include: chemical, electrical, engineering, fertilizers, food, metal, mining, oil and soap, pulp and paper, refractory, textile and wood. Most of the residents in the region depend on irrigated agriculture for their livelihood, and 29 billion cubic metres (BCM) of drainage water loaded with fertilizers, pesticides, and organic material is returned to the Nile annually upstream from Cairo (Ayad, 2013).

3.2.4. Domestic use

In villages, where the only available water is from irrigation canals, women use the water for domestic purposes and also dump the used water back into the drainages. Poverty on the other hand has forced people to use unsustainable means to survive. Communities living along the concentrated NRB depend heavily on
farming, but the ensuing drought, famine, population growth and land degradation have impacted the water resources in the NRB. This is due to excessive burning for land cultivation in many parts of the Nile River which has virtually eroded the oasis therefore making it extremely tough for cultivation and water conservation (Rahman, 2011). As argued by Kofi Anan “unsustainable practices are woven deeply in to the fabric of modern life. Land degradation threatens food security. Forest destruction threatens biodiversity. Water pollution threatens public health and fierce competition for fresh water may well become a source of conflict and wars in the future” (UN Press Release, 2001).

3.3. Structural-induced scarcity: uneven water distribution in the NRB

International river basins have become a tense area for competitive exploitation. Consequently, disputes have become inevitable. The argument that water scarcity will lead to conflict in the Nile Basin is contested by an opposing view that, water scarcity is likely to force cooperation between riparian countries. This would be true if only the underlying cause of water scarcity in the Nile Basin wasn’t the politics of distribution (Pakes, 2013:434). One of the most contentious issues related to the Nile is the utilisation of available water resources (UNEP, 2006:2-4). The water scarcity problem in the Nile region is not only a result of the amount or scale of rainfall, but also a result of the agreements that govern the Nile River which have rendered unequal utilization of water between the upstream and downstream riparian countries.

The Nile, as an internationally shared river, has therefore created political, social and economic tensions and disputes between upstream and downstream countries concerning the distribution and use of the waters. The Nile River extends across political borders and as a result has created misunderstandings or lack of beneficial agreements about the allocation of water (Concaet al, 2000:1). The Nile therefore became subject to numerous agreements due to it being an international and transboundary river (Demeke, 2013).
Many bilateral treaties governing the Nile were bilateral in nature (McKenzie, 2012:579). These treaties were concluded between Egypt, which was then under Britain’s control, Britain and other foreign or European powers to regulate the utilisation of the Nile and to ensure that projects upstream would not disturb the flow of water to Egypt (Okoth-Owiro, 2004:1). These include five treaties between 1891 and 1925 (i.e. The 1891 Protocol between the UK and Italy for the demarcation of their respective spheres of influence in Eastern Africa; the 1902 Anglo-Ethiopian Treaty for the delimitation of the frontier between Ethiopia and the Sudan; the 1906 Treaty between the UK and the Independent State of Congo to re-define their respective spheres of influence in Eastern and Central Africa; the 1906 Tripartite Agreement and Set of Declarations between the UK, France and Italy; and, the 1925 Exchange of Notes between Italy and UK) (Rubenson, 1976; Degefu, 2003; Okoth-Owiro, 2004; Yihdego, 2013). According to Knobelsdorf (2006:5), these series of negotiations and understandings became what are known as the 1929 Nile Water Agreements.

### 3.3.1. The 1929 and 1959 Nile water Agreements

The 1929 agreement served as the basis for principles of the Nile allocation to Egypt. Therefore, it posed two requirements for the utilisation of the Nile. Firstly, it outlined quotas on the amount of water to be shared between Sudan and Egypt (McKenzie, 2012:580). With the Nile Rivers’ average flow of 84 billion cubic meters per year (BCM/yr), these estimates suggested that Egypt would need 48 BCM/yr and that Sudan’s irrigation would survive on the Blue Nile alone which accounted for approximately 4 BCM/yr. Thus, leaving 32 BCM/yr unallocated (Wolf and Newton, 2008). Due to the fluctuation of the river, it was agreed upon that during any change in the flow, gain or shortfall, the Nile waters will be divided evenly between Egypt and Sudan (McCaffrey, 2003:265; Okoth-Owiro, 2004:8; Lumumba, 2007:12-13). Secondly, Note No.1 para.4 (b) and Note No.2 para.4 of the agreement gave Egypt veto rights on any upstream project that may alter the flow of the Nile and to argue on the basis of natural and historical rights (Knobelsdorf, 2006:6; McKenzie, 2012:580). By giving Egypt the right to extensively utilize the Nile and a property rule

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5 Exchange of note between His Majesty’s government in the United Kingdom and the Egyptian government on the use of Waters of the Nile for irrigation
to protect this right has therefore structurally deterred upstream riparian states from utilizing the Nile (Dunoff and Trachtmann, 1999:24; Chesire, 2010:13).

However, the 1929 agreement did not guarantee the full utilisation or exploitation of the Nile waters hence the need for a revised agreement. The 1929 agreement was revised on the 8th of November 1959 through the 1959 agreement for the full utilisation and control of the Nile waters (UN, 1974:65). The 1959 Agreement was entirely exclusive (Knobelsdorf, 2006:8; Demke, 2013). The agreement is a bilateral agreement which allocated the entire flow of the Nile waters at Aswan to Egypt and Sudan, thus effectively excluding other Nile riparians (Lino, 2013:12).

The two purposes mentioned in the introductory stipulations of the 1959 Agreement specify both Egypt and Sudan’s intentions to claim the full control over the Nile waters and to make solid future claims of the Nile waters. According to these Introductory Stipulations, “the Nile River projects require for their execution and administration, full agreement and cooperation between the two Republics in order to regulate their benefits and utilize the Nile waters in a manner which secures the present and future requirements of the two countries; and, as the Nile waters Agreement concluded in 1929 provided only for the partial use of the Nile waters and did not extend to include a complete control of the River waters, the two Republics have agreed on the complete control of the River waters” (International Water Law Project, 2014a).

The agreement was brought about after Sudan gained independence in 1953 and therefore pushed her demands for a greater share of the Nile. The changes were to expand the amount of water allocated to Sudan and also in consideration of the changing economic and political landscape (McKenzie, 2012:581). According to the provisions of the agreement, the average flow of the river is considered to be 84 BCM/yr. The agreement considered evaporation and seepage to account for 10 BCM/yr, leaving 74 BCM/yr to be divided between Egypt and Sudan. The agreement argued that “acquired rights” for Egypt would account for approximately 48 BCM and Sudan would acquire 4 BCM. And the remaining “benefits” of approximately 22 BCM are divided by a ratio of 7½ for Egypt and 14½ for Sudan (International Water Law Project, 2014). These calculations are based on “historical right” plus “acquired

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6 Agreement between the Republic of the Sudan and the United Arab Republic for the Full Utilization of the Nile Waters.
Despite the difficulties to determine, monitor and quantify the Nile flow or its actual total annual flow since it varies by season and year, the “average annual BCM” used to argue for allocation in the agreements has taken into account for expected seasonal fluctuations (Knobelsdorf, 2006:6-8).

This meant upstream countries could not use any water. However, Art.5, para.1 and 2 of Agreement stipulates that “If it becomes necessary to hold any negotiations concerning the Nile, with any riparian state, outside the boundaries of the two Republics, the Governments of the Sudan Republic and the United Arab Republic shall agree on a unified view after the subject is studied by the said Technical Commission”. The said unified view shall be the basis of any negotiations by the Commission with the said states; and, If the negotiations result in an agreement to construct any works on the river, outside the boundaries of the two Republics, the joint Technical Commission shall after consulting the authorities in the Governments of the States concerned, draw all the technical execution details and the working and maintenance arrangements (International Water Law Project, 2014).

And the Commission shall, after the sanction of the same by the Governments concerned, supervise the carrying out of the said technical agreements” (International Water Law Project, 2014). Despite numerous attempts in the late 50s and 60s with many upstream countries gaining independence, downstream countries’ suggests that upstream countries’ have voice imprecise and undefined claims to the share of the Nile (Carroll, 1999:279; McKenzie, 2012:582).

From this, it can therefore be concluded that, these agreements respectively, systematically denied upstream riparian countries access to the Nile. Tvedt (2004:480) argues that “these water sharing treaties have kept Nile Basin countries in conflict over the regions’ most precious resource”. Supporting this is an exchange of violent threats between upstream and downstream countries between the 1970s to today.
3.4. Recommendations

3.4.1. African Union (AU)

The AU has outlined crucial steps in the preservation of natural resources. This is evident through its Convention on the Conservation of Nature and Natural Resources.

Firstly, Article IV on Land and Soil, sections 1, 2, 3 and 4 of the AU’s Convention on the Conservation of Nature and Natural Resources has argued that it:

... ensures to prevent land degradation through implementing land tenure policies to: establish land-use plans based on scientific investigations; implement agricultural practices and agrarian reforms; improve and introduce soil conservation, sustainable farming and forestry practices; and, control pollution and erosion caused by agricultural activities, mining and the disposal of wastes (African Union, 2003:6).

Secondly, Article V on Water, sections 2 and 3 of the same Convention propose considerable provisions in preserving water and minimizing the possibility of water related disputes in transboundary basins. Section 2 states:

The parties shall establish and implement policies for the planning, conservation, management, utilization and development of underground and surface water, as well as the harvesting and use of rain water, and shall endeavour to guarantee for their populations a sufficient and continuous supply of suitable water (African Union, 2003:7)

According to section 3:

Where surface or underground water resources are shared by two or more of the contracting states, the latter shall act in consultation, and if the need arises, set up inter-state commissions to study and resolve problems arising from the joint use of these resources, and for the joint development and conservation thereof” (African Union, 2003:7).

These provisions if effectively applied, with the oversight of the AU, can change the landscape of the Nile and the nature of disputes.
3.4.2. Nile Basin Initiative (NBI)

The establishment of the NBI as an inter-state commission, that aims to ensure long-term development and improve land use practices and management of the Nile water resources for the benefit of all without discrimination (World Bank, 2008:2), compliments Article V (2) of the Convention of the AU on shared water resources.

According to Wolf and Newton (2008), from 1967 to 1992, the United Nations Development Program (UNDP) supported a Hydromet project designed to collect hydrometeorologic information within the basin. Based on the findings of this project, the Technical Cooperation Committee for the Promotion of the Development and Environmental Protection of the Nile Basin (TECCONILE) was formed in 1993 with the idea to create informal dialogue between riparian nations. They further argue that, the TECCONILE later resulted into the creation of the Nile River Basin Action Plan in 1995 (NRBAP) to ensure a joint planning of the utilisation and development of the Nile waters.

In 1997, the Council of Ministers of Water Affairs of the Nile Basin States (Nile-COM), were allowed by the World Bank (WB) to direct and coordinate donor activities within the basin, which led the Council to work in cooperation with organizations such as the UNDP, the WB and the Canadian International Development Agency (CIDA) (Wolf and Newton, 2008). Guvele (2003) asserts that a few years later, in February 1999, the NRBAP culminated in the creation of the Nile Basin Initiative (NBI) which was to oversee the cooperative, substantial socio-economic benefits and regional peace and security framework of the NRB (Nile Basin Initiative, 2014).

The initiative was launched with the understanding that a cooperative effort in the development and management of Nile waters will bring the greatest level of mutual benefit on the region. All the riparian countries joined the organisation. It signalled the recognition of shared interests among Nile basin countries in an effort to foster cooperation. It was in May 2010 that Nile basin countries (i.e. 5 of the 11 states namely: Ethiopia, Uganda, Tanzania, Rwanda and Kenya) signed the Cooperative Framework Agreement (CFA) to transform the NBI into a permanent Nile River Basin Commission (Nile Basin Initiative, 2014). The commission is based in Entebbe and its chair rotates between its members (Lie, 2010:13). The intention of the NBI is to
establish a comprehensive framework for the planning, management and utilisation of the natural resources of the Nile, principally water (Oloo, 2007:95).

The NBI aimed to include all members through participatory processes of dialogues (Wiebe 2001: 751; World Bank, 2008:2). It also constituted a departure from the past trend of unilateral water use and management, particularly in emphasising the issues of fair water allocation, joint management and development of the resources. This signals a fundamental shift in the status quo of upstream–downstream relations, particularly in the relationship between Egypt, Sudan and Ethiopia (Lie, 2010:11).

3.5. **Conclusion**

Water scarcity is already affecting every continent. The scarcity of water, especially in Africa, makes it an important subject for study. It is predicted that the demand for water will increase at more than twice the rate of population growth, therefore making the Nile region chronically deprived of water (Baecheret al, 2000:39). Although Homer-Dixon also believes that the issues of environmental scarcity and conflict may not be widely observable until the coming centuries, however it is clear that disputes and tensions in the NRB and in shared water resources are central to scarcity.

However, the article has shown that water resources just as any other economic resource has a full potential of being subject to pressure from population growth, depletion and degradation and uneven distribution, and thus causing tension and conflict among users. The theory supported its hypothesis by indicating the nature and extent of the relationship between environmental scarcity and conflict, and the implications that these three kinds of scarcities have on the potential of conflict among the Nile basin countries. Homer-Dixon (1999:4) further argued that environmental scarcity is likely to increase and will cause more internal and international violence.

There is a need for a new international water agreement for the Nile basin, one that is initiated by an African organisation or commission (Foulds, 2002:1). According to Othieno and Zondi (2006:2-3), “there has to be a resolution to the question of balance between who has the historic right to the Nile’s water, and issues of
sovereign water rights especially with regards to where the river ought to be controlled, whether that be upstream or downstream”. This entails the need for both the AU and the NBI to rectify the status quo of the 1929 and 1959 Agreements. And in so doing, it will subsequently enable them to develop a common position on the equitable exploitation and utilisation of the Nile Basin resources. Their role should take into consideration the Nile region’s already complex political environment.
### 3.6. Bibliography


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